

Harold N. Moldenke

PRIVA Adans.

Literature: E. Mey., *Comm. Pl. Afr. Austr.* 275. 1837; Steud., *Nom. Bot.*, ed. 2, 1: 208. 1840; Steud., *Nom. Bot.*, ed. 2, 2: 397. 1841; Mart. & Gal., *Bull. Acad. Roy. Brux.* 11 (2): 323--325. 1844; Bot. Zeit. 3: 587. 1845; Walp., *Repert.* 4: 36. 1845; *Flora*, April 7, 1846, p. 207. 1846; Schau. in A. DC., *Prodr.* 11: 532--535 & 572. 1847; C. Gay, *Hist. Fis. Chile Bot.* 5: [6], pl. 55. 1849; Schau. in Mart., *Fl. Bras.* 9: 177--180. 1951; Jaub. & Spach, *Ill. Pl. Orient.* 5: [57]--60 & 105--110, pl. 453--455. 1853--1856; Hasskarl, *Retzia* 1: 56--57. 1855; Miq., *Fl. Ned. Ind.* 2: 906. 1859; Turcz., *Bull. Soc. Imp. Nat. Mosc.* 35 (2): 328--329. 1862; Bocq., *Adansonia* 3: 212 [Rev. *Verbenac.* 116], pl. 18. 1863; Miers, *Trans. Linn. Soc. Lond.* 27: 100--104. 1871; Gibert, *Enum. Pl. Montevid.* 44. 1873; W. Ulrich, *Internat. Wörterb. Pflanzennamen.* 1875; Benth. & Hook., *Gen. Pl.* 2 (2): 1137 & 1145. 1876; S. Wats., *Proc. Am. Acad.* 18: 135. 1883; W. Miller, *Dict. of English Names of Pl. Applied Cult. & Wild Pl.* 1884; S. Wats., *Proc. Am. Acad.* 23: 282. 1888; S. Wats., *Proc. Am. Acad.* 25: 160. 1890; Hook. f. & Jacks., *Ind. Kew.* 1: 350. 1893; Hook. f. & Jacks., *Ind. Kew.* 2: 65. 1894; Hook. f. & Jacks., *Ind. Kew.* 2: 628 & 1248. 1895; Briq. in Engl. & Prantl, *Nat. Pflanzenfam.* 4 (3a): 144, 153, & 155, fig. 59 E. 1895; Thiselton-Dyer, *Fl. Trop. Afr.* 5: 285. 1900; Rusby, *Bull. Torrey Bot. Club* 27: 80. 1900; Urb., *Symb. Ant.* 4: 534. 1903; E. G. Paris, *Ind. Bryolog.*, ed. 2, 5: 33--61. 1906; Gerth van Wijk, *Dict. Pl. Names* 1066. 1911; Thiselton-Dyer, *Fl. Cap.* 5: 206. 1912; Jacks., *Proc. Linn. Soc. Bot.* 1911-1912, *Suppl. Ind. Linn. Herb.* 116. 1912; Briq., *Règl. Internat. Nom. Bot.*, ed. 2, 42. 1912; Urb., *Symb. Ant.* 7: 354. 1913; Léveillé in Fedde, *Repert.* 12: 534. 1913; Druce, *Bot. Exch. Club Brit. Isles* 4: 641. 1917; Bakh., *Bull. Jard. Bot. Buitenz.*, sér. 3, 3: 7. 1921; Chiov., *Bull. Soc. Bot. Ital.* 115. 1923; Kobuski, *Ann. Mo. Bot. Gard.* 13: 1--34, pl. 1--5. 1926; Koidz., *Bot. Mag. Tokyo* 43: 400. 1929; Alston in Trimen, *Handb. Fl. Ceylon* 6: 231. 1931; Small, *Man, Southeast Fl.* 1140. 1933; Junell, *Symb. Bot. Upsal.* 4: 39--43. 1934; Moldenke in Fedde, *Repert.* 41: 1--76. 1936; Martyn, *Ind. Phan. Jenman Herb.* 465, mss. 1937; Moldenke, *Chron. Bot.* 3: 311. 1937; Standl., *Field Mus. Publ. Bot.* 18: 1012. 1938; Moldenke, *Geogr. Distrib.* 32. 1939; Moldenke, *Lilloa* 4: 302--304. 1939; Moldenke, *Carnegie Inst. Wash. Publ.* 522: 184--187. 1940; Moldenke, *Prelim. Alph. List Invalid Names* 7--9, 30, 36, 38--40, 42, 43, 54, & 55. 1940; Moldenke, *Phytologia* 1: 429--430. 1940; Moldenke, *Alph. List Invalid Names* 6, 7, 29, 36, 40, 43, & 44. 1942; Moldenke in Lundell, *Fl. Texas* 3 (1): 70--71. 1942; Niemeyer & Stellfeld, *Arquiv. Mus. Parana.* 3: 18. 1943; Moldenke, *Phytologia* 2: 111. 1944; Reko, *Bol. Soc. Bot. Mex.* 4: 35. 1946; Moldenke, *Alph. List Invalid Names Suppl.* 1: 19. 1947; Daniel, *Verb. Cent.*

Antioq. 5. 1947; Moldenke, *Phytologia* 2: 142 & 159. 1948; Moldenke, *Known Geogr. Distrib. Verbenac.* 10, 23, 25, 31, 32, 34, 36--42, 44--58, 61, 64, 66--68, 70, 71, 73, 89, 97, 99, 109, 110, 115--120, 122, 124, 125, 128--130, 144, 163, & 195. 1949; Moldenke, *Phytologia* 3: 172--173. 1949; Moldenke, *Phytologia* 3: 276. 1950; Stellfeld, *Trib. Farmac.* 19 (10): 171. 1951; Moldenke, *Phytologia* 3: 423--424. 1951.

Footnote 2 on page 62 of my monograph in Fedde, *Repert.* 41: 1--76 (1936) is incorrect. According to *Bot. Zeitung* 3: 587 [Aug. 29, 1845], pages 1--192 of Walpers, *Repertorium*, volume 4, were issued in 1845, not 1844 nor 1846. This fact was verified for me by the late Dr. John H. Barnhart.

In regard to the date of publication of Jaubert & Spach, *Illustr. Pl. Orient.* 5: pl. 453--455, a letter from W. T. Stearn dated November 12, 1936, states: "Internal evidence (cf. pp. 105--110) indicates that they must have been published before November 1856; they were stamped at the British Museum, Bloomsbury, on 3 April 1856; as the British Museum subscribed to the work, parts would be received there within a month or two of their publication in Paris; accordingly it seems fairly safe to accept them as being published during the first quarter of 1856."

On page 2, line 19, of my monograph, the word "Front." is a typographic error for "Frond."

The common names "Drehling", "Eisenhart", and "velvet bur" are recorded for the genus. The genus *Priva* is placed in the *Labiatae*, section *Verbeneae*, by H. G. L. Reichenbach in *Mössler, Handb. Gewächsk.*, ed. 1, 1: xxxvi (1827) and ed. 3, 1: lxxv. 1833; also by him in his *Conspect. Reg. Veg.* 1: 117 (1828) where he lists as synonyms *Phryma* Forsk. and *Tortula* Roxb. under *Priva* Adans. *Streptium* Roxb. is given as a valid genus.

It is worthy of note here that the "*Phryma caroliniensis* Walt." sometimes found in literature and on herbarium sheets is actually a synonym of *Stylodon carneus* (Medic.) Moldenke.

Explanation of the abbreviations employed for the names of herbaria in this and subsequent notes will be found in my booklet entitled "A list showing the location of the principal collections of *Verbenaceae* and *Avicenniaceae*", pp. 1--3 (1942) and its Supplement 1, pp. 1--2 (1947) and in *Phytologia* 3: 179-180 (1949), 3: 321 & 382 (1950), 3: 491 (1951), and 4: 295 (1953).

*PRIVA ADHAERENS* (Forsk.) Chiov.

Literature: Forsk., *Fl. Aegypt.-arab.* cxv. 1774; Forsk., *Descr. Pl. Fl. Aegypt.-arab.* 114. 1775; Vahl, *Symb. Bot.* 3: 6. 1794; Mirbel, *Hist. Nat. Pl.*, ed. 2, 15: 233. 1805; Pers., *Syn. Pl.* 2: 138--139. 1806; A. L. Juss., *Ann. Mus. Hist. Nat. Paris* 7: 70. 1806; Poir. in Lam., *Encycl. Méth. Bot.* 8: 344. 1808; Steud., *Nom. Bot.*, ed. 1, 874. 1821; E. Mey., *Comm. Pl. Afr. Austr.* 275. 1837; Schau. in A. DC., *Prodr.* 11: 553--554 & 556. 1847; Jaub. & Spach, *Ill. Pl. Orient.* 5: [59], pl. 455. 1856;

Hook. f. & Jacks., Ind. Kew. 2: 628. 1894; Chiov., Bull. Soc. Bot. Ital. 115. 1923; Kobuski, Ann. Mo. Bot. Gard. 13: 9. 1926; Alston in Trimen, Handb. Fl. Ceylon 6: 231. 1931; Moldenke in Fedde, Repert. 41: 39--42. 1936; Moldenke, Prelim. Alph. List Invalid Names 36, 38, 40, 43, 46, & 54. 1940; Moldenke, Alph. List Invalid Names 36, 39, 40, 43, 47, & 57. 1942; Moldenke, Phytologia 2: 111. 1944; Moldenke, Known Geogr. Distrib. Verbenac. 109, 110, 117, 118, 122, 124, & 195. 1949.

The name Priva dentata has been erroneously applied to specimens of Verbena supina L. in some herbaria. Fries states that P. adhaerens grows one-half meter tall in woods.

Additional citations: ARABIA: Yemen: Botta s.n. [Haig, Octobre 1837] (P, P), s.n. [Djeunati] (P, P); Deflers 617 (P); Lunz 17 (Br, Br, Mu--440, Mu--441), s.n. (B); Wahab s.n. [Juhali hills, May 1904] (Ed). ANGLO-EGYPTIAN SUDAN: Red Sea: Aylmer s.n. [Barra Kassala, 25/2/36] (K); Schweinfurth 54 (B, B). ERITREA: Hildebrandt 724a (B, B, B). ABYSSINIA: Ellenbeck 2203 (B); Stecker s.n. [10.XII.1800] (B). BRITISH SOMALILAND: Ellenbeck 182 (B), 182a (B), 198 (B), 233 (B). KENYA: Ellenbeck 2322 (B). UNION OF SOUTH AFRICA: Natal: H. Forbes 833 (Na--21803); Fries & Fries 3628 (S); J. M. Wood 4092 (Na--4704). COUNTRY UNDETERMINED: C. G. Ehrenberg s.n. [Hanakel, Tagodele] (B), s.n. [Tagodele] (B, B), s.n. [Tagodele & Eilet] (P). ILLUSTRATIONS: Jaubert & Spach, Ill. Pl. Orient. 5: pl. 455. 1856 (P).

#### PRIVA AFRICANA Moldenke

Literature: Moldenke in Fedde, Repert. 41: 36--37. 1936; Moldenke, Known Geogr. Distrib. Verbenac. 122 & 195. 1949.

Codd & Dyer describe the species as a shrublet, one foot tall, with mauve flowers, growing on limestone formations. It has been collected in anthesis in February and December.

Additional citations: UNION OF SOUTH AFRICA: Transvaal: Codd & Dyer 3386 (N); Pole-Evans 1964 (Af--22700); F. A. Rogers 22507 (N--fragment of type); Thode A.1758 (N--photo, Na--25138, Z--photo); Van Dam s.n. [Dec. 1924] (N).

#### PRIVA ARMATA S. Wats.

Literature: S. Wats., Proc. Amer. Acad. 25: 160. 1890; Moldenke in Fedde, Repert. 41: 50--52. 1936; Moldenke, Known Geogr. Distrib. Verbenac. 31 & 195. 1949.

The species has been collected in valleys, in anthesis and in fruit during July.

Additional citations: MEXICO: Nuevo Leon: Pringle 1931 (Br--isotype, Cb--isotype, Ed--isotype, F--109393--isotype, Me--isotype, Mu--1414--isotype, Mu--1416--isotype, Ob--isotype, Pa--isotype, Us--isotype, Vt--isotype, Vu--isotype), 2674 (F--263110, Io--38716, Me, Me).

#### PRIVA ASPERA H.B.K.

Literature: H.B.K., Nov. Gen. & Sp. Pl. 2: 278. 1818;

Schrad., Ind. Sem. Hort. Götting. 1831; Schrad., Linnaea 8, Litteratur-Bericht 24. 1833; Mart. & Gal., Bull. Acad. Roy. Brux. 11 (2): 324. 1844; Schau. in A. DC., Prodr. 11: 534-535. 1847; Mann, Enum. Hawaiian Pl. 194. 1867; Wawra, Flora 58: 252. 1875; Hillebrand, Fl. Hawaiian Isls. 341. 1888; S. Wats., Proc. Amer. Acad. 23: 282. 1888; Drake, Ill. Fl. Ins. Mar. Pac. 1: 250. 1890; Kobuski, Ann. Mo. Bot. Gard. 13: 20. 1926; Junell, Symb. Bot. Upsal. 4: 39-42, fig. 76 a & b. 1934; Moldenke in Fedde, Repert. 41: 54-57. 1936; Standl., Field Mus. Publ. Bot. 18: 1012. 1938; Moldenke, Prelim. Alph. List Invalid Names 7, 38, & 39. 1940; Gentry, Carnegie Inst. Wash. Publ. 527: 223-224 & 306. 1942; Moldenke, Alph. List Invalid Names 6 & 39. 1942; Moldenke, Phytologia 2: 111. 1944; Moldenke, Known Geogr. Distrib. Verbenac. 31, 36, 38, 39, 163, & 195. 1949; Matuda, Am. Midl. Nat. 44: 576. 1950.

Additional synonyms are Priva aspera DC. ex Moldenke, Prelim. Alph. List Invalid Names 38, in syn. 1940; Priva orizaba Wats. ex Moldenke, op. cit. 39, in syn. 1940; Priva rugosa A. DC. ex Moldenke, op. cit., 39, in syn. 1940.

The type collection of Priva aspera is Humboldt & Bonpland 4323 at Paris, sometimes referred to as Herb. Bonpland 4323. The species has been collected in anthesis and in fruit in January, February, and from July through December. The Bourgeau 2950 collection is a mixture, at least in some herbaria, of this species and Lantana achyranthifolia Desf. The Collector undesignated s.n. in the DeCandolle Herbarium at Geneva was erroneously determined as Antirrhinum sp.; Hahn 289 was determined as Basella sp.; Pringle 287 and Turckheim II.1628 were previously determined by herbarium workers as "P. echinata Juss.", M. E. Jones 7323 and Edw. Palmer 1999 as "P. hispida", M. E. Jones s.n. as "P. orizaba Wats.", Brenes 17215 as P. lappulacea (L.) Pers., and J. R. Johnston 1613 as P. mexicana (L.) Pers.

The Tonduz s.n. [Herb. Instit. Physico-geogr. Nat. Costaric. 8207] cited by me on page 57 of my monograph as from "Province undetermined" in Costa Rica, is actually from San José.

Drawings of cross-sections of the ovary of this species are seen in the Junell reference cited above. The species has been collected at altitudes of 1200 to 1950 meters; in Chihuahua it has been found at 7000 feet. Galeotti describes it as "rare", with reddish-white or rose flowers. Gentry, in the reference cited above, says that the species inhabits hillslopes and canyon-bottoms in the oak forest and lower pine zones, at altitudes of 4000 to 5000 feet. He describes it as an infrequent shrub-like perennial herb with a woody base and long, slender, arching branches when growing on the slopes or else rank and completely herbaceous when growing in moist bottoms, 1 to 2 meters tall, with lavender flowers blooming in summer. He also found it among pines in small gullies in the Transition and Upper Sonoran zones, where, he says, it is a shrub 1 to 2 meters tall, with thick hollow stems.



Hinton describes the species as 1 to 3 meters tall, with pink or red flowers, growing in woods, on barrancas or llanos, in arroyos, and along stone fences. He records the vernacular names "salvia alta" and "pengua", and says the plant is medicinal. Stanford found it on mountains with luxuriant vegetation and describes the flowers as blue. This collection was misidentified as P. mexicana (L.) Pers. by I. M. Johnston. Purpus found the plant on moist rocky slopes; Standley on brushy slopes and in damp or wet thickets, calling it a large, erect, ascending, or decumbent herb with shiny black fruit and pale-purple or blue flowers. Shreve found it growing in open shrubbery. The Muellers describe the flowers as white, with purple on the inside of the upper lip. Sharp collected the species at the edge of a bluff and describes it as an herb 3 to 5 feet tall, with pink flowers.

Some specimens of Galeotti 792, type collection of P. trachelioides Mart. & Gal., bear printed labels indicating that they were collected in Oaxaca; others state in longhand that they are from near Morelia in Michoacán. It is probable that the latter is correct for all the specimens of this collection.

The Hawaiian material, such as St. John, Baker, Coulter, Fosberg, & Yuncker 12717, distributed as Priva aspera is actually Salvia occidentalis Sw. Dr. Fosberg, in a letter to me dated January 30, 1939, tells me that the name Priva aspera first appeared in the literature on Hawaiian botany in Mann's Enumeration of Hawaiian Plants, page 194 (1867) and was based on Mann & Brigham 74, which I have seen and which is Salvia occidentalis. It later appeared in Wawra's account in Flora 58: 252 (1875), Hillebrand's Flora of the Hawaiian Islands, page 341 (1888), and in Drake's Ill. Fl. Ins. Mar. Pac. 1: 259 (1890). Wawra's specimen is preserved in Vienna. The Schultes & Reko 528, from Mexico, distributed as Priva aspera, is also Salvia occidentalis, as is likewise the J. F. G. Stokes s.n. collected at Koali in January, 1912.

Additional citations: MEXICO: Chiapas: Matuda 1684 (Ld, Mh, Mi, N), 4885 (Ld, Mh), S.221 (La, Mi). Chihuahua: Gentry 2524 (Ca--582115, F--862365, Fs, Ge, La, Me, S), 2524b (La); M. E. Jones 7323 (Du--149112, Po--86314), s.n. [Guayanopa Canyon, Sept. 24, 1903] (Du--155994, Po--84191, Po--84193); LeSueur 1187 (Au, F--885656); Pringle 287 (F--262745, Io--38717, Me, Me, Me, Pl--22600, Po--158479, Up--17059, Vt, Vt); Townsend & Barber 422 (Ed, F--103124, P). Durango: Shreve 9138 (Fs, Mi). Federal District: Ghiesbreght 167 (P, P). Guerrero: Hinton 9601 (Au, K, N), 10687 (Au, N, N), 11517 (Du--290382, N, N); A. J. Sharp 441476 (N). Jalisco: Edw. Palmer 500 (Me, P, Pa, Us, Vu). Mexico: Hinton 4459 (K, N), 4813 (Au, K, N), 4845 (N). Michoacán: Arsène 45 (F--387226), 2545 (P), 2796 (Cm), 5292 (P), 9796 (Ur), s.n. [Rincon, 8/9/1910] (Br, P); Galeotti 792, in part (N--photo, P, Z--photo); Hinton 12170 (N, N), 13154 (Au, La, N),

15625 (Au, N, N); Humboldt & Bonpland 4323 [Macbride photos 39475] (F--1038408--photo of type, Kr--photo of type, N--photo of type, P--type, P--isotype, Z--photo of type). Morelos: E. Lyonnet 2542 (W--1748354); Moldenke & Moldenke 19840 (Es, Lg, N, Or, Sm). Nayarit: Edw. Palmer 1999 (F--222749, Fs, Mi). Nuevo Leon: Mueller & Mueller 1131 (He). Oaxaca: Galeotti 792, in part (Br). Puebla: A. J. Sharp 44938 (N). Sonora: Gentry 1735 (Ge, La). Tamaulipas: Stanford, Retherford, & Northcraft 1026 (N). Veracruz: Botteri 619 (P), 620 (P); Bourgeau 1505 (P, P), 2749 (P), 2950, in part (Br, Mu--1285, N, P, P, P, P, P, Vu), 3118, in part (Br, P, P); Galeotti 2613 (Br, Br, P); Hahn 289 (P), s.n. [23 Decemb.] (P); Purpus 1921 (F--201528, Vu), 16230 (F--773753, K, K, N, N); Schiede 136 (Mu--432); Seaton 465 (F--266850); A. J. Sharp 441672 (N). State undetermined: Abb6n s.n. [San Augustine, 8.1911] (P); Andrieux 139 (Dc, P); Collector undesignate s.n. [1826] (Dc); Schiede 90 (P). GUATEMALA: Alta Verapaz: Turckheim II.1628 (Br, Br, Ed, N). Chimaltenango: J. R. Johnston 829 (F--898960), 1074 (F--907629), 1613 (F--1041692); P. C. Standley 57860 (F--993527, N), 79925 (N). Guatemala: P. C. Standley 59750 (F--981668). Sacatepéquez: P. C. Standley 63310 (F--982591, N). Department undetermined: Savage s.n. [1846] (P). COSTA RICA: Alajuela: Brenes 17215 (F--859585, N). San José: Kuntze s.n. [VI.74] (F--297638); H. Pittier 6953 (Br); Tonduz 6953 (Br), 8207 (Br, Br). CULTIVATED: England: Herb. Hort. Boynton s.n. (V). Germany: Herb. Hort. Monacensis s.n. (Br); Herb. Zuccarini s.n. (Mu--433, Mu--434).

PRIVA BAHIENSIS P. DC.

Literature: Schau. in A. DC., Prodr. 11: 533. 1847; Schau. in Mart., Fl. Bras. 9: 179--180 & 307, pl. 50. 1851; Briq. in Engl. & Prantl, Nat. Pflanzenfam. 4 (3a): 155. 1895; Moldenke in Fedde, Repert. 41: 48--50. 1936; Moldenke, Known Geogr. Distrib. Verbenac. 89, 99, & 195. 1949.

On page 48 of my monograph I erroneously accredit this binomial to "A. DC." Actually, it was first proposed by the older Augustin Pyramus de Candolle and so should be accredited to "P. DC.", the abbreviation usually employed for this man.

The species has been said to inhabit fields. It has been collected in anthesis in January and June, and in fruit in June. Schery describes it as an herb 3 dm. tall, with lavender flowers, growing on red sandy soil in xerophytic "caatinga".

Additional citations: BRAZIL: Bahia: Blanchet 745 (Dc), 1027 [Macbride photos 7857] (Dc--cotype, Kr--photo of cotype, P--cotype); Martius 2195 (Mu--435--cotype), s.n. (Mu--436--cotype, Mu--437--cotype, Mu--438--cotype, Mu--439--cotype); Salzmann 438 (Dc), s.n. [1831] (Ed--cotype); Schery 491 (N). Pernambuco: Pickel 561 [Herb. Inst. Bot. São Paulo 20098] (Sp), 2616 (Mi). State undetermined: Herb. Rio de Janeiro 32276 (Ja). ILLUSTR-

TIONS: Mart., Fl. Bras. 9: pl. 50. 1851 (B).

PRIVA BOLIVIANA Moldenke

Literature: Moldenke, *Phytologia* 3: 172--173. 1949; Moldenke, *Phytologia* 3: 289. 1950.

Rojas describes the species as suffrutescent, 3--4 dm. tall, with blue-lilac flowers. Peredo says it is 4 to 8 dm. tall, with violet flowers. It has been collected at altitudes of 350 meters, blooming in January and March.

Additional citations: BOLIVIA: Santa Cruz: Peredo s.n. [29. I. 47] (N--type, N--isotype, Ug--isotype). PARAGUAY: T. Rojas 7249 (N).

PRIVA CORDIFOLIA (L. f.) Druce

Literature: L. f., *Suppl.* 287. 1781; Roxb., *Pl. Coromand.* 2: 25, pl. 146. 1798; Willd., *Sp. Pl.* 3: 359. 1801; Rottl., *Gesell. Naturforsch. Freunde Berlin, Neue Schrift.* 4: 222. 1803; A. L. Juss., *Ann. Mus. Hist. Nat. Paris* 7: 70. 1806; Gill. & Hook. in Hook., *Bot. Misc.* 1: 163. 1830; Schau. in A. DC., *Prodr.* 11: 533. 1847; Hook. f. & Jacks., *Ind. Kew.* 1: 350. 1893; Thiselt.-Dyer, *Fl. Trop. Afr.* 5: 285. 1900; Zahlbr., *Ann. Nat. Hofmus. Wien* 20: 45. 1905; Briq., *Règl. Internat. Nom. Bot.*, ed. 2, 42. 1912; Thiselt.-Dyer, *Fl. Cap.* 5: 206--207. 1912; Druce, *Rep. Bot. Exch. Club Brit. Isles* 4: 641. 1917; Moldenke in Fedde, *Repert.* 41: 42--45. 1936; Moldenke, *Prelim. Alph. List Invalid Names* 8, 38, 43, & 44. 1940; Moldenke, *Alph. List Invalid Names* 7, 39, 43, 44, & 45. 1942; Moldenke, *Phytologia* 2: 111. 1944; Razi, *Journ. Mysore Univ.* 7 (4): 63. 1946; Moldenke, *Known Geogr. Distrib. Verbenac.* 124, 125, 128--130, 163, & 195. 1949; Razi & Govindu, *Journ. Ind. Bot. Soc.* 28: 226. 1949; Govindu, *Journ. Mysore Univ.* 10 (1): 48. 1949; Razi, *Journ. Mysore Univ.* 11 (2): 48. 1950; Santapau, *Pl. Saurashtra* 31. 1953.

An additional synonym is Verbena forskaelaei Vahl ex Rottl., *Gesell. Naturforsch. Freunde Berlin, Neue Schrift.* 4: 222. 1803.

I have examined the type specimen of Buchnera cordifolia L. f. It is sheet number 2 under Buchnera in the Linnean Herbarium and is labeled "cordifolia" in the handwriting of Linnaeus and "König 77" in the hand of the younger Linné. On the reverse side is the following diagnosis in the hand of the younger man: "Buchnera Tanschaurensis - foliis oppositis cordatis dentatis seminibus nuciformibus echinatis. Habitat ad margines hortorum raras in India. König".

The Vahl specimen cited below was originally identified as "Verbena forskælei Vahl" and "Priva dentata Pers." Zahlbruckner in the reference cited above cites Krook s.n. [Penther 1776] as "P. leptostachya Juss.", but this collection is actually the type collection of P. cordifolia var. australis Moldenke. The synonymous binomial F. leptostachya ascribed by me on page 42 of my monograph to "Juss." should actually be accredited to "A. L. Juss."

The Vinzent s.n. from Rusk County, Texas, and Herb. Harvey

s.n. [Texas, 1853; Dudley Herb. 297538], distributed as this species, are actually Phryma leptostachya L., while the Meebold 12826 from Natal, also distributed as "Priva leptostachya Juss.," is actually Verbena litoralis H.B.K.

Wight states that P. cordifolia is found "In rubbish near tanks under the shade of trees. I first met with this plant at Samulcotta, perhaps in the same place that Roxburgh first saw it. Since then I found it at Frualore near Sanpore and a few other places. It may however be considered a rare plant." Razi records it from Mysore and calls it a therophyte (according to the Raunkiaer classification of life-forms). Govindu records it from Bangalore and says that it blooms there from August to October. It has also been collected in anthesis in January and July. Bulkley records the vernacular name of "watray cheddy".

Additional citations: INDIA: Bombay: Meebold 11279 (B). Madras: W. H. Campbell s.n. (Ed); König 77 (It--photo of type, N--photo of type, Z--photo of type); Leschenault 852 (P, P); Roxburgh s.n. [Samulcotta] (Br, Br). Mysore: G. Thomson s.n. [Maison & Carnatic] (B, Mu--455, P). Punjab: J. R. Drummond 26708 (Cb, Ed, P), 26711 (Ed). State undetermined: Edw. Bulkley s.n. [Fort St. George in East India, 1700] (Ed); B. Heyne 1814 (B); Herb. Link s.n. (B); Rottler 295 [Penins. Ind. Orient.] (Mu--454); R. Wight s.n. [Trichinopoly] (Ed). BURMA: Upper Burma: Shaik Mokim 254 (Po--63541, Us); Wallich 2657d [381] (Dc). CULTIVATED: England: Salisbury 100 (Dc). Germany: Herb. Hort. Bot. Berol. s.n. (B); Herb. Zuccarini s.n. [Hort. Bot. Monac.] (Mu--456). India: F. B. Hamilton 1327 (Ed); Wallich 79 (Br), 274 (P, P), 2657b (Dc), 2657c (Dc), 2657e (P), 2675c (B, B), 2675e (B). LOCALITY OF COLLECTION UNDESIGNATED: Collector undesignated s.n. (Ed, Ed); Herb. Engler s.n. (B); Herb. Thunberg s.n. (Th); Salisbury s.n. [1816] (B); Vahl s.n. (Q).

PRIVA CORDIFOLIA var. ABEYSSINICA (Jaub. & Spach) Moldenke

Literature: Jaub. & Spach, Ill. Pl. Orient. 5: [57]--58, pl. 453 & 454. 1856; Briq. in Engl. & Prantl, Nat. Pflanzenfam. 4 (3a): 153, fig. 59E. 1895; Moldenke in Fedde, Repert. 41: 45--47. 1936; Moldenke, Prelim. Alph. List Invalid Names 38. 1940; Moldenke, Alph. List Invalid Names 39. 1942; Moldenke, Phytologia 2: 111. 1944; Moldenke, Known Geogr. Distrib. Verbenac. 109, 110, 116--120, 122, 124, & 195. 1949.

Herb. to 1 m. tall; stems erect, mostly branching, sharply tetragonal, strigillose-puberulent or becoming subglabrate in age, brown or purplish in drying, rather leafy; nodes annulate, often decussately contracted; branchlets similar to the stems in all respects but usually more densely strigillose; principal internodes 3.5--9.5 cm. long; leaves decussate-opposite, numerous; petioles slender, 0.5--4.1 cm. long, strigillose-pubescent or puberulent; blades chartaceous, dark-green above, somewhat lighter beneath, ovate, 2--9.5 cm. long, 1.3--7.5 cm. wide, ab-



ruptly acute at the apex, rather coarsely serrate from the widest part to the apex with rather large acute teeth, subtruncate or subcordate at the base, with the very center usually slightly prolonged into the petiole, usually rather densely strigillose or substrigose above, densely strigillose and also puberulent beneath; midrib slender, slightly prominulous beneath, visible above; secondaries very slender, 4 or 5 per side, ascending, not much arcuate, prominulous beneath, usually not visible above; vein and veinlet reticulation delicate, indiscernible above, often obscure beneath; inflorescence terminal, terminating the stems and branchlets, subspicate during anthesis, racemiform in fruit, many-flowered, 9.5--36 cm. long, 0.6--2 cm. wide; peduncles continuous with the stems or branchlets and similar to them in all respects, 1.5--3.7 cm. long, but usually more densely strigillose; rachis similar to the peduncle in all respects, the flowers distinctly spiral-alternate, but often pseudo-second; prophylla linear-subulate, 1--4 mm. long, strigillose, one subtending each flower; pedicels obsolete in anthesis or to 1 mm. long and puberulent-strigillose, in fruit elongated to 3 mm. and wide-spreading, often pseudo-second; calyx tubular, regular, about 6 mm. long and 3.3 mm. wide, usually widest below the middle, densely short-tomentose on the outer surface with uncinata hairs about 0.1 mm. long and interspersed among them scattered straight hairs about 0.5 mm. long, 5-ribbed, its rim 5-toothed, with narrowly triangular teeth about 0.5 mm. long and 0.3 mm. wide at the base; corolla rosy-white or white with 3 mauve stripes, hypocrateriform, zygomorphic, glabrous on the outer surface, its tube broadly cylindric, curvate, venose, decidedly twisted, about 11.4 mm. long on the abaxial and 13 mm. long on the axial side, about 2.8 mm. wide at the base, ampliate to 3.6 mm. below the apex, somewhat pilose with scattered hairs within, its limb 2-lipped, 5-parted, the central abaxial lobe about 2 mm. long and 3.1 mm. wide, the two lateral abaxial lobes each about 2 mm. long and 2.6 mm. wide, and the two axial lobes each about 1.8 mm. long and 2.6 mm. wide, all the lobes broadly elliptic-lingulate and rounded; fertile stamens 4, didynamous, included, the upper pair inserted about 8.3 mm. and the lower pair about 6.2 mm. above the base of the corolla-tube; filaments filiform, about 1.3 mm. long, pilose throughout; anthers ovate, about 0.6 mm. long and 0.3 mm. wide, dorsifixed at about the middle, the thecae only slightly divergent at the base; staminode obsolete; pistil included; style capillary, twisted, about 6.2 mm. long, glabrous, somewhat widened at the base, very much ampliate at the apex and 2-lobed, the front lobe erect, about 0.2 mm. long, and stigmatiferous, the rear lobe very obscure and tooth-like; ovary oblong, about 1.3 mm. long and 0.5 mm. wide, obscurely 4-lobed at the apex, glabrous, 4-celled, 4-ovulate; fruiting-calyx thin-membranous, inflated, enclosing the fruit and very shortly rostrate at the apex, 5.5--7 mm. long, 7--8 mm. wide, densely hirsutulous throughout on the outer surface with uncinata whitish hairs, sometimes interspersed with longer straight hairs, glabrous within; schizocarp flattened, oblate,

composed of two exactly similar closely joined dry 2-celled cocci, each mature coccus about 4 mm. long and 3 mm. wide, the dorsal surface and sides densely short-puberulent, the dorsal surface echinate with two parallel longitudinal marginal rows of straight sharp spines, each spine plainly separate to the base and 0.4-1 mm. long, the area between the rows of spines scrobiculate-reticulate or sometimes also more or less verruculose, the sides scribulate-reticulate on the half adjoining the rows of spines, the remainder transversely parallel-ridged with long slender ridges, the commissural surface deeply excavated and widely thin-margined, the apex of the margins usually involute and not ridged.

The variety has been collected at altitudes of 3000 to 5000 feet in Eritrea. It inhabits rocky places and has been collected in anthesis in January and May. The binomials Zapania arabica Poir. and Tamonea arabica Mirb. are sometimes considered as synonymous with this variety, but actually these names are based on the Verbena forskålaei of Vahl and are thus synonyms of Priva adhaerens (Forsk.) Chiov.

The Forbes s.n. cited below has leaves that are strangely small for this variety; Pappi 3873 has cocci with hardly any central cavity; Bachmann 1153 has characters that point toward P. meyeri Jaub. & Spach. The Schimper 153 collection was misidentified as Scrophularia arguta Sol. at Berlin.

Additional citations: ARABIA: Yemen: Deflers 85 (P), 392 (P). ANGLO-EGYPTIAN SUDAN: Red Sea: Schweinfurth 433 (B). ABYSSINIA: Ellenbeck 990 (B); Schimper 153 (B, B, B), 565 (P--5 isotypes, Vu--isotype), 1023 (B, P). ERITREA: Pappi 180 (B), 3873 (N, S); Schimper 37 (B, B, Cb); Steudner 1301 (B, B). UGANDA: Dümmer 30 (Ed, Ed, P). TANGANYIKA TERRITORY: Scheffler 113 (B). KENYA: Hildebrandt 2616 (B); Mearns 2313 (Br); F. Thomas III.132 (B). BRITISH NYASALAND PROTECTORATE: J. Buchanan 887 (B). UNION OF SOUTH AFRICA: Cape of Good Hope: Bachmann 1153 (B). Natal: H. M. L. Forbes 477 (Na--20191), s.n. [Berea, January 1931] (Ms). Transvaal: H. Bolus 10970 (Af--22688, Na--9968); Leendertz 333 (Na--15689); Repton 182 (Af--22690); F. A. Rogers 21007 (Af--22692); C. A. Smith 2299 (Af--22689); Verdoorn 650 (Af--22691); R. G. N. Young A.623 [Herb. Transvaal Mus. 34633] (Na--27366). State undetermined: E. Wall 16 [Matumba, White River, 24/1038] (Ew). MADAGASCAR: Decary 3792 (P). LOCALITY OF COLLECTION UNDESIGNATED: Herb. Baillon s.n. (P); Herb. Van den Bossche s.n. [Hort. Thenensis III.823, in part] (B); Revoil 90 [Comalis] (P). ILLUSTRATIONS: Jaubert & Spach, Ill. Pl. Orient. 5: pl. 453. 1856 (P); Kobuski drawing 8 (E), 17 (E); Ostenmeyer drawing 153 (V).

PRIVA CORDIFOLIA var. AUSTRALIS Moldenke

Literature: Moldenke in Fedde, Repert. 41: 47. 1936; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 52 & 99. 1942;

[ed. 2], 122 & 195. 1949.

The Van Dam specimen cited below was originally identified as var. abyssinica (Jaub. & Spach) Moldenke.

Additional citations: UNION OF SOUTH AFRICA: Transvaal: Breyer s.n. [II.1918] (N); T. J. Jenkins 6701 (Tm); Leendertz 333 (Tm--8549); Meeuse 9123 (Z), 9177 (Z), 9216 (Z); Obermeyer 1011 (Tm--31584); Van Dam s.n. [III.1920] (N).

PRIVA CORDIFOLIA var. FLABELLIFORMIS Moldenke

Literature: Moldenke in Fedde, Repert. 41: 47--48. 1936; Loes. in Mildbr., Wiss. Ergebn. Deutsch. Zent.-Exp. 1907-1908, 2: 281. 1911; Moldenke, Known Geogr. Distrib. Verbenac. [ed. 1], 49, 50, & 99. 1942; Robyns, Fl. Spermat. Parc Nat. Albert 2: 139. 1947; Moldenke, Known Geogr. Distrib. Verbenac. [ed. 2], 115--117, 119, 120, & 195. 1949.

Robyns in the reference cited above gives "P. leptostachya Juss." as a synonym of this variety, but actually it is a synonym of the typical form of the species. The variety is referred to as P. leptostachya also by Loesener in the reference cited above.

The species is said by collectors to grow on forest floors, at forest edges, along roadsides, in savannas and grassy savannas, and among granite rocks. Brass describes it as common on grassy beaches. It has been found at altitudes 800 to 1290 meters. It has been collected in anthesis and fruit from January to May, in July, and from September to November. Sturgeon describes the plant as 2 feet tall; Robyns says it grows to half a meter tall, while Brass found it one meter tall. The flowers are described as white to mauve or rosy-white.

Additional citations: BELGIAN CONGO: Bequaert 3302 (Br, Br), 4198 (Br); DeGraer 731 (Br, Br); Lebrun 4353 (Br, Br), 4592 (Br, Br). UGANDA: Linder 2669 (B); Stuhlmann 1323 (B), 8231 (B).

TANGANYIKA TERRITORY: Höhnel 68 (B); Engler 412 (B), 1056a (B); Holst 3454 (B); Mildbraed 2757 (B, B); Schlieben 1576 (B, Br, Cb, Cb, K, Mu), 3231 (B--isotype, B--isotype, B--isotype, B--isotype, Cb--isotype, P--isotype). SOUTHERN RHODESIA: N. C. Chase 4566 [Govt. Herb. Salisbury 37455] (Br, Le, N, Z); Hack s.n. [14/3/50] (Rh--27329); J. C. Hopkins s.n. [19.2.43] (Rh--9733); Sturgeon s.n. (Rh--18101); Wild 1911 [Govt. Herb. Salisbury 16402] (Rh--16402, S), 3048 (Rh--25245). BRITISH NYASALAND PROTECTORATE: Brass 17847 (N). PORTUGUESE EAST AFRICA: Quelimane: H. Faulkner "Pretoria 112" (N).

PRIVA CURTISIAE Kobuski

Literature: Kobuski, Ann. Mo. Bot. Gard. 13: 7, pl. 2. 1926; Moldenke in Fedde, Repert. 41: 52--54. 1936; Moldenke, Known Geogr. Distrib. Verbenac. [ed. 1], 50 & 99. 1942; [ed. 2], 117, 118, & 195. 1949.

Additional citations: KENYA: A. G. Curtis 499 (S--photo of type, Z--photo of type). TANGANYIKA TERRITORY: Petzholtz 153

(B); Volkens 2154 (B, Ed).

PRIVA DOMINGENSIS Urb.

Literature: Urb., Symb. Ant. 7: 354. 1913; Ciferri, Atti Inst. Bot. Univ. Pavia IV, 8: 104. 1936; Moldenke in Fedde, Repert. 41: 21--23. 1936; Moldenke, Known Geogr. Distrib. Verbenac. [ed. 1], 26 & 99. 1942; [ed. 2], 48 & 195. 1949.

Additional citations: HISPANIOLA: Dominican Republic: Ekman H.13737 (N); Valeur 186 (S). Haïti: Leonard & Leonard 13037 (K--fragment).

PRIVA GRANDIFLORA (Ort.) Moldenke

Literature: Ort., Hort. Matr. Dec. 2. 1797; Mart. & Gal., Bull. Acad. Roy. Brux. 11 (2): 323. 1844; Schau. in A. DC., Prodr. 11: 555. 1847; S. Wats., Proc. Amer. Acad. 18: 135. 1883; Kobuski, Ann. Mo. Bot. Gard. 13: 17. 1926; Perry, Ann. Mo. Bot. Gard. 20: 342. 1933; Moldenke in Fedde, Repert. 41: 14--17. 1936; Moldenke, Prelim. Alph. List Invalid Names 39, 43, & 48. 1940; Moldenke, Known Geogr. Distrib. Verbenac. [ed. 1], 18, 74, & 99. 1942; Moldenke, Alph. List Invalid Names 39, 44, & 50. 1942; Moldenke, Phytologia 2: 111. 1944; Moldenke, Phytologia 2: 142. 1946; Moldenke, Alph. List Invalid Names Suppl. 1: 19 & 24. 1947; Moldenke, Known Geogr. Distrib. Verbenac. [ed. 2], 31, 163, & 195. 1949.

Synonymy: Verbena grandiflora Ort., Hort. Matr. Dec. 2. 1797. Verbena rhinanthifolia Mart. & Gal., Bull. Acad. Roy. Brux. 11 (2): 323. 1844. Priva tuberosa S. Wats., Proc. Amer. Acad. 18: 135. 1883. Priva rhinanthifolia (Mart. & Gal.) B. L. Robinson ex Kobuski, Ann. Mo. Bot. Gard. 13: 17. 1926. Tozzia mexicana Schaffner ex Moldenke in Fedde, Repert. 41: 14, in syn. 1936. Priva rhibanthifolia (Mart. & Gal.) Griff. ex Moldenke in Fedde, Repert. 41: 14, in syn. 1936; Moldenke, Prelim. Alph. List Invalid Names 39, in syn. 1940. Verbena tuberosa Sessé & Moc. ex Moldenke, Prelim. Alph. List Invalid Names 49, in syn. 1940 [not V. tuberosa R. Graham].

In my monograph I used the name Priva rhinanthifolia for this species because I did not then know of the earlier specific epithet of Ortega. The original description by Ortega of his Verbena grandiflora says of the leaves "Folia sessilia, ovato-oblonga, superne dentata, denticulis remotis; venoso-lineata, scabra, undulata". Perry in the reference cited above says of this plant of Ortega: "Although the description is inadequate for positive identification, the phrase 'Semina saepius duo' would seem to indicate that the species does not belong in the genus Verbena." The specimen from the Botanical Garden at Madrid, cited below, settles the identity of the plant in question.

The Rusby 321 and Bourgeau 357 cited by me on page 15 of my monograph as from the state of Mexico are actually from the Federal District. The Herb. Prager 18636 cited below was mis-identified as "Verbena littoralis Humb.", the Bourgeau 357 at Stock-



holm as "Lantana sp.", and Shreve 9179 as "Verbena sp."

The flowers are described by collectors as lavender, rose, or lilac-pink. The species has been found in anthesis from June to September and in fruit from July to September. The flowers on Balls 4923 are 2 cm. long and 1.5 cm. wide even when dried. The species is said by collectors to inhabit rich moist soil of open woodlands, oak woods, open grasslands, dry ditch banks, grassy hills, calcareous soil, and hillsides under oaks, and to be found in grass by cornfields and on bare hills, at altitudes from 2100 meters to 8000 feet. The Pringle 1549 and 4147 collections show the underground tubers very well, especially on the University of Vermont specimens. Balls describes the species as prostrate, spreading, with stems to 18 inches long, tuberous-rooted, forming loose mats to 18 inches across, with pale-mauve flowers to half an inch across, with a light center and with wavy margins on the petals and somewhat hairy leaves, growing on dry open hills among grasses and scattered shrubs and in open sandy stretches among grass, etc., on the edge of old lava flows.

Additional citations: MEXICO: Chihuahua: LeSueur 95 (Au, Au, F--837321, Gg--319698); Pringle 1549 (F--262927, Me, Me, Vt), 3057 (F--109532, Mi, Mu--4163, Pa). Durango: Edw. Palmer 396 (F--213123), 424 (F--51503); Shreve 9179 (Fs, Tu--35527). Federal District: Balls 4923 (W--1793738), 5665 (W--1793888); F. A. Barkley 16M996c (Au); Bourgeau 357 (Br, Mu--1339, S); Harshberger 198 (Up, Ur--17060); Kenoyer A.614 (F--1000702, in part); E. Lyonnet 596 (N, W--1642921); MacDaniels 717 (Ba, F--867742); Miranda & Barkley 16M996 (Au, N, Si), 16M996c (S); Miranda, Barkley, & Rowell 7448 (Au). Hidalgo: Mexia 2743 (Ca--442645); Pringle 7586 (F--120251); F. Salazar s.n. [Agosto 10, 1913] (Me). México: MacDaniels 552 (Ba); Matuda 21185 (N), 26167 (Z), 26291 (Z); Pringle 7516 (La). Michoacán: Hinton 13204 (Au, N, N, N); Kenoyer A.612a (F--1000702, in part); Olfers 833 (B); Pringle 4147 (Br, Ed, F--264045, Fs, Me, Me, Me, Mu--1784, Ob--50745, P, Vt, Vu). Oaxaca: Galeotti 794 (Br, F--photo, N--photo, Si--photo, Z--photo). State undetermined: Herb. Prager 18636 (Gg--31444); Schmitz 653 [Cerro de Alberto, Las Remedios; Herb. Reichenbach f. 280766] (V), s.n. [Mexico; Herb. Reichenbach f. 120153] (V); Sessé, Mociffo, Castillo, & Maldonado 122 (F--846478, Q), 123 ["93"] (F--846486, Q). CULTIVATED: Spain: Herb. Jard. Bot. Madrid s.n. (Q). ILLUSTRATIONS: Kobuski drawing 13 (E--925406), 22 (E--925405).

PRIVA HUMBERTI Moldenke

Literature: Moldenke, Phytologia 3: 423--424 & 459. 1951.

Additional citations: MADAGASCAR: Humbert 19942 (N--fragment of type, N--photo of type, P--type, Z--photo of type).

PRIVA LAPPULACEA (L.) Pers.

Literature: Sloane, Cat. Pl. Ins. Jamaic. 66. 1696; Sloane, Hist. Pl. Jamaic. 1: 174, pl. 110, fig. 1. 1707; L., Sp. Pl., ed. 1, 19. 1753; P. Browne, Hist. Nat. Jamaic. 116. 1756; Loeffl., Iter Hisp. 194. 1758; Jacq., Obs. Bot. 37, pl. 24. 1764; Lam., Tabl. Encycl. Méth. Bot. 1: 59. 1791; Bot. Zeit. Regensb. 5: 321--330. 1806; Pers., Syn. Pl. 2: 139. 1806; A. L. Juss., Ann. Mus. Hist. Nat. Paris 7: 70. 1806; Poir. in Lam., Encycl. Méth. Bot. 7: 568. 1806; Steud., Nom. Bot., ed. 1, 873. 1821; Steud., Nom. Bot., ed. 2, 1: 208. 1840; Steud., Nom. Bot., ed. 2, 2: 397. 1841; Mart. & Gal., Bull. Acad. Roy. Brux. 11 (2): 325. 1844; Presl, Bot. Bemerck. 99. 1844; Schau. in A. DC., Prodr. 11: 534 & 556. 1847; Schau. in Mart., Fl. Bras. 9: 179. 1851; Hassk., Retzia 1: 56--57. 1855; Miq., Fl. Ned. Ind. 2: 906. 1859; Griseb., Fl. Brit. W. Ind. 493. 1861; Fawcett, Prov. List Indig. Nat. Fl. Pl. Jamaic. 30. 1893; Hook. f. & Jacks., Ind. Kew. 1: 310. 1893; H. H. Rusby, Mem. Torr. Bot. Club 6: 106. 1896; H. H. Rusby, Bull. Torr. Bot. Club 27: 80. 1900; Briq., Arkiv Bot. 2 (10): 22. 1904; Pulle, Enum. Pl. Surinam. 402. 1906; Britton & Millsp., Bahama Fl. 367. 1920; Bakh., Bull. Jard. Bot. Buitenz., sér. 3, 3: 7 & 11. 1921; Britton & P. Wils., Scient. Surv. P. Rico 6 (1): 144. 1925; Epling, Journ. Bot. 1929: 12. 1929; Seymour, Host. Ind. Fungi N. Amer. 588--589. 1929; J. K. Small, Man. Southeast. Fl. 1140. 1933; Junell, Symb. Bot. Upsal. 4: 39--41 & 43, fig. 75. 1934; Moldenke in Fedde, Repert. 41: 24--35. 1936; Standl., Field Mus. Publ. Bot. 18: 1013. 1938; Moldenke, Lilloa 4: 303--304. 1939; Moldenke, Annot. List 108. 1939; Moldenke, Alph. List Common & Vern. Names 31. 1939; Moldenke in Fedde, Repert. 48: 98--100. 1940; Moldenke in Pulle, Fl. Surinam. 4 (2): 279--281. 1940; Yuncker, Field Mus. Publ. Bot. 9 (4): 330. 1940; Lanjouw & Uitten, Rec. Trav. Bot. Néerl. 37: 168. 1940; Moldenke, Carnegie Inst. Wash. Publ. 522: 184--187. 1940; Moldenke, Prelim. Alph. List Invalid Names 7, 9, 38, 40, 43, 46, 47, & 54. 1940; Moldenke, Suppl. List Common & Vern. Names 5, 21, 23, & 24. 1940; Questel, Fl. Isl. St.-Barthol. 179. 1941; Calderón & Standl., Fl. Salvador., ed. 2, 239. 1941; Moldenke, Suppl. List Invalid Names 9. 1941; A. M. T. Davis, Study Boscaj. Palma Cameron Co. 61, mss. 1942; León, Revist. Soc. Geogr. Cuba 2: 42. 1942; H. S. Gentry, Carnegie Inst. Wash. Publ. 527: 223--224 & 306. 1942; Moldenke in Lundell, Fl. Texas 3 (1): 71--72. 1942; Moldenke, Known Geogr. Distrib. Verbenac. [ed. 1], 5, 12, 18, 20--35, 38, 40, 64, 74, & 99. 1942; Moldenke, Alph. List Invalid Names 6, 7, 39, 40, 43, 47, 48, & 57. 1942; Ramirez Cantu, Anal. Inst. Biol. 14: 405. 1943; Bol. Mus. Hist. Nat. Javier Prado 7: 244. 1943; Moldenke, Phytologia 2: 111 & 126. 1944; Darlington & Janaki Ammal, Chromosome Atlas 270. 1945; W. C. Leavenworth, Am. Midl. Nat. 36: 187. 1946; Daniel, Verb. Cent. Antioq. 5. 1947; Moldenke, Alph. List Invalid Names Suppl. 1: 24 & 28. 1947; Hodge, Revist. Fac. Nat. Agron. 7: 313. 1947; Moldenke, Wrightia 1 (4): 244. 1948; Moldenke, Phytologia 2: 159. 1948; Moldenke, Known Geogr. Distrib. Verbenac. [ed. 2], 10, 23, 32, 34, 36--38, 40--42, 44--58, 61, 64, 66--68, 70, 71, 73, 89, 97, 144, 163, & 195. 1949; Mol-

denke, Anal. Inst. Biol. Mex. 20: 11. 1949; Barkley, Determinac. Ejemp. Herb. Fac. Agron. Medellin 1 (1): 5 & 5: 48 (1949) & 2 (1): 4. 1950; Anal. Inst. Biol. Mex. 22: 421. 1951; F. C. Hoehne, Ind. Bibl. e Num. Pl. Col. Com. Rondon 350. 1951; Roig, Dicc. Bot. 1: 387--388 & 2: 1087. 1953.

Additional synonyms: Verbena lappacea Jacq., Obs. Bot., pl. 24, sphalm. 1764. Priva mexicana Sieber ex Presl, Bot. Bemerk. 99, in syn. 1844. Blairia lappulacea Steud. ex Hook. f. & Jacks., Ind. Kew. 1: 310, in syn. 1893. Verbenia lappulacea L. ex Bakh., Bull. Jard. Bot. Buitenz., sér. 3, 3: 7, in syn. 1921. Priva echinacea A. L. Juss. ex Moldenke in Fedde, Repert. 41: 25, in syn. 1936; Moldenke, Prelim. Alph. List Invalid Names 38, in syn. 1940. Priva lappulaceae Rowlee ex Moldenke in Fedde, Repert. 41: 24, in syn. 1936; Moldenke, Prelim. Alph. List Invalid Names 38, in syn. 1940. Priva echinata Juss. ex Moldenke, Prelim. Alph. List Invalid Names 38, in syn. 1940. Tamonia lappulacea (L.) Poir. ex Moldenke, Prelim. Alph. List Invalid Names 43, in syn. 1940. Tomonea lappulacea (L.) Poir. ex Moldenke, Prelim. Alph. List Invalid Names 43, in syn. 1940. Verbena lapulacea L. ex Moldenke, Prelim. Alph. List Invalid Names 47, in syn. 1940. Verbena lapulacea L. ex Moldenke, Prelim. Alph. List Invalid Names 47, in syn. 1940. Verbena nispidia Sessé & Moc. ex Moldenke, Suppl. List Invalid Names 9, in syn. 1941. Priva lapulacea (L.) Pers. ex Darlington & Janaki Annal, Chromosome Atlas 270, sphalm. 1945. Verbena hispida Sessé & Moc. ex Moldenke, Alph. List Invalid Names Suppl. 1: 24, in syn. 1947 [not V. hispida Ruiz & Pav., 1798]. Priva lappulacea (L.) Pers. ex F. C. Hoehne, Ind. Bibl. e Num. Pl. Col. Com. Rondon 350, sphalm. 1951. Priva lappulacea L., in herb.

Several statements in my monograph need correction, as follows: on page 25 the binomial Priva echinata is accredited to "Juss." -- since there are two botanists with this surname who have worked in the Verbenaceae, the name should be accredited to "A. L. Juss." The Karwinski s.n. from Hazda de Sumatoc, cited on page 33 from "State undetermined", is probably from Sumate, Hidalgo, Mexico, according to a letter from my good friend Dr. Maximino Martínez. The André K.1568, cited on page 34 from "Province undetermined", is probably from Guaytacama, Chimborazo, Ecuador, according to information contained in a letter to me from the Ecuadorian Embassy dated September 17, 1945. The Gaumer & sons 1702 and 1702 bis, cited on page 32 from Yucatán, are actually from Quintana Roo, Mexico. The United Fruit Co. 71 cited on page 33 from "Province undetermined", is from Limón, Costa Rica. The Cowell 245, cited on the same page from an undetermined province, proves to be from the Canal Zone, Panama. Britton, Britton, & Shafer 3, cited on page 30 from Matanzas, is actually from Havana, Cuba. The Collector undesignated 311, cited on page 34, is actually Focke 311 according to Pullé in

the reference cited above. The "Hinton 5901" cited on page 32 appears to be an error for Hinton 5801 and was collected in Guerrero, Mexico. H. H. Rusby 698, cited on page 34 as from "State undetermined", is actually from La Paz, Bolivia.

The Ledru 6, cited below, is the type collection of Priva echinata A. L. Juss. Lanjouw & Uitten, in their reference cited above, speak of an Aublet specimen of P. lappulacea in Herb. Denaiffel 1: 18, which I have not as yet seen. A cross-section of the ovary of this species is to be seen in Junell, Symb. Bot. Upsal. 4: fig. 75 (1934). Darlington & Janaki Ammal, in their reference cited above, report the haploid chromosome number as 6. The Ciferri 16, cited below, is host for Micropuccinia lantanae (Farl.) Arth. & Jacks.; the same fungus is on the leaves of Gutierrez Villegas & Barkley 17C073B.

The species has apparently been collected in anthesis and in fruit in every month of the year except April, growing at altitudes from sea-level to 1230 meters. Besides the colors given on page 28 of my monograph for the corolla, the following are recorded by collectors: pink, pale-lavender, purple, blue, pale-blue, and whitish-blue. White-flowered specimens are represented by the following collections: Fawcett 8058; Fosberg 22133; Hinton 4360, 13941, and 13975; Howard & Howard 9486; Peck 293b; Wedel 2834; Ll. Williams 11006; and Worth, Morrison, & Horton 8611. Gentry describes the flowers of his number 4828 as lavender with a white tube, while Camp says for his plant that the corolla-tube is white and the lobes are pale-lavender with purple veins.

Wedel describes the plant as a "shrub 2 1/2 feet tall", while Woodson, Allen, & Seifert say the plant on Taboga Island is 1.5-2 meters tall! Small & Carter call it a diffuse herb, which, by the way, is the only form in which I have personally seen it. Leavenworth says it is an herb with lavender flowers and a woody taproot, growing in brown-gray loam over limestone on rocky semi-desert mountains. Standley says it is an ascending or suberect herb 2-3 feet tall. Gentry reports the species from valley margins, canyon slopes, and milpa clearings in the short-tree forest zone of Mexico, at altitudes of 1000 to 3000 feet. He says it is a colonial perennial herb one meter or less tall, with light-purple or pale-blue flowers, visited by Sphex wasps, blooming during the summer. C. F. Baker describes it as only 1 to 2 feet tall. Peck describes it as "spreading and freely branching, with small, white, very deciduous [=caducous] flowers," while Schipp says it is a "tall annual herb to 3 feet tall and half inch in diameter, occasional in swampy places among low brush near the seacoast, with light-blue flowers". Runyon says that in Texas it is an annual plant with purple inodorous flowers, growing in shade on fertile, black, alluvial soil in thickets and along resacas, at altitudes of about 10 meters, scattered through Cameron County. Standley says that in Honduras it is a decumbent herb 2 to 3 feet tall, with pale-purple corol-



las, common in wet fields.

Box in his Flora of Antigua (mss.) says it is a weed in cultivated lands and waste places, occasional to frequent locally, in the lowlands of Antigua. He cites a Wullschlägel s.n. and Box 1021 from that island. Britton & Brace in Field Mus. Publ. Bot. 2: 179 state that the species is an introduced weed in the Bahamas. It is mentioned by Debora Ramirez Cantu in her reference cited above as growing at Ayutla and Raboso, near Matamoros, Tamaulipas, Mexico. Lundell reports it from various parts of Petén, Guatemala, in his Veg. Petén, pp. 75, 109, & 183. It is said to be tolerant of shade, and in addition to the habitats listed on page 27 of my monograph, collectors have found it in hammocks, sandy soil along roadsides, dry arroyos, dry or occupied clearings, open places, thickets, waste places near habitations, rough pastures, dry ground in shade by springs, sandy soil between dunes, weedy flats, and low wet palm areas in swamps, on wooded slopes, llanos, platanals, open banks, canyon floors, limestone rock, and barrancas, along trails and riversides, and in streets.

Britton & Wilson record the common name "bur-vervain" from Puerto Rico, and Britton & Millspaugh the names "bur-vervain" and "cat's-tongue" from the Bahamas; Daniel calls it "cadillito" in Colombia, while Brenes, in Costa Rica, calls it "pegajosa". In Cuba Brother León records the name "globito", while in El Salvador Calderón & Standley list "mozote", "mozote de gallina", "mozote de pollo", and "cola de alacrán". In Venezuela Saer says it is known as "cadillito" and "pegajosa". Quentin reports the name "collant", while Van Wijk lists "styptic bur", "velvet bur", and "Sonderähre". On the Tres Marias Islands, according to Howell, it is known as "yerba buena del campo", while in Cuba Roig reports the names "amor seco" and "farolito". Runyon and Roviroso both report the name "cadillo de bolsa". Standley reports "mozotillo", and a name in Java is said to be "voekoe voekoe tolman".

Matuda 4821 was originally mis-identified as Priva aspera H.B.K. The Afzelius s.n., cited below, was originally mis-identified as "Priva leptostachya Juss.", while the Duchassaing s.n. from Panama and the Leprieur s.n. from Cayenne were labeled "Ghinia verbenacea". Sagot s.n. from Kourou was originally distributed as "Tamonea verbenacea Sw." The Harris s.n. from Jamaica was identified by someone as Heliotropium indicum L., while Tate 581 was mis-named Periloma organoides Kunth by Dr. Rusby.

The Brown & West specimen and two A. S. Rhoads specimens distributed as "Priva echinata" and "P. lappulacea" at the University of Florida are actually Schobera angiosperma (Murr.) Britton. The Vogl 313 and G. F. Gaumer 1704, distributed as Priva lappulacea, and the Gaumer & sons 364, in part, distributed as "Priva echinata", are both actually Salvia occidentalis Sw., as are also the Dahl s.n., Herb. Gasström s.n., Herb. Mus. Stockholm s.n., and Swartz s.n. in the Stockholm herbarium.

The original description of Linnaeus on which this species is based reads as follows:

"6. VERBENA diandra, calycibus subrotundis erectiusculis, seminibus echinatis. lappulacea.

Scorodinia floribus spicatis purpurascens pentapetaloidibus, Sloan. jam. 66.

Blairia H<sub>o</sub>ust. Amm. herb. 277.

Habitat in Jamaica."

In the Linnean Herbarium specimen number "4" under genus 35, Verbena, is labeled "mexicana" in Linnaeus' handwriting, and is clearly what we now call Priva mexicana (L.) Pers., although the actual type specimen of this taxon is probably in the Dillenius Herbarium at Oxford University. Specimen number "5" in that same genus is labeled "lappulacea" in the handwriting of Solander and bears the notation "Br" [=Browne; Patrick Browne's herbarium was purchased for Linnaeus in 1758]. It is the true Priva lappulacea (L.) Pers. as we know it today. Specimen number "6", pinned together with number "5", is labeled "lappulacea" in Linnaeus' own handwriting and bears a notation "Br" [=Browne] and "Rolander" [Rolander collected in Surinam after 1754]. This specimen, however, is not even verbenaceous, but is Salvia occidentalis Sw.

In the Sloane Herbarium at the British Museum is preserved the type specimen of Scorodinia floribus spicatis purpurascens pentapetaloidibus of Sloane [Cat. 66 (1696) and Hist. Jamaica. 1: 174, pl. 110, fig. 1 (1707)]. This type material consists of two distinct collections, both referred to on the margin of Sloane's original copy of his Hist. Jamaica. The first is in volume 3, page 58, of the bound herbarium. This collection bears a label with the name "Scorodinia floribus, etc." in Sloane's handwriting and it also has mounted with it a copy of the plate (no. 110, fig. 1) which matches it perfectly to the minutest detail. The specimen is Teucrium inflatum Sw. The second collection is on page 59 of the same bound volume. It bears only a small label of Sloane's, reading "Eadem cum praeced.?" I am arbitrarily designating this second specimen as the type since it, and it alone, of this original material cited by Linnaeus, is what has been known as Priva lappulacea ever since the genus Priva was established. In this connection, see also Dr. Epling's notes in Journ. Bot. 1929: 12 (1929) and my own in Fedde, Repert. 48: 98--100 (1940).

Additional citations: FLORIDA: Monroe Co.: Blodgett s.n. [Key West] (Ch); Buswell s.n. [July 7, 1935] (Bu); A. P. Garber s.n. [Key West, Aug. 1877] (Pa, Vt); H. N. Moldenke 614 (Go, H-5451, Ob--83226, Up, Ur); Small, Small, & Matthews 10216 (N). TEXAS: Cameron Co.: Cory 36620 (Au), 36621 (Au), 36622 (N, N); A. M. Davis s.n. [Palm Grove, Sept. '41] (Au); C. L. Lundell 12466 (Sm); R. Runyon 562 (Rr), 2185 (Rr). MEXICO: Baja California: T. S. Brandegee s.n. [Sept. 15, 1890] (Du--9518); Hammerly 305 (Du--295382, Gg--294856). Campeche: Goldman 458 (F-281245);

C. L. Lundell 883 (Au, Au, Du--222614, Me, Me, Nt). Chiapas: Matuda 4821 (Ld, Mh), S.76 (Mi). Chihuahua: H. S. Gentry 1571 (Ca--576860, E--1102244, F--809646, Fs, Ge, La, La, Me, Me, N, N, S). Colima: Bravo Hollis 253-7153 (Me); Ferris 6032 (Du--149984); Goldsmith 89 (Gg--311209, N); Worth, Morrison, & Horton 8611 (Fs). Guerrero: Hinton 5801 (F--878873, N), 10366 (K, N), 10545 (K, N, N), 10573 (K, N, N), 14391 (N, N); J. T. Howell 8471 (Gg--272182); E. Lyonnet 483 (N); MacDaniels 182 (Ba); Edw. Palmer 551 (F--265787, Gg--162964). México: Hinton 2643 (N), 4360 (N); Ortenburger, Paxson, & Barkley 16M816 (Au). Michoacán: Hinton 12224 (Gg--310894, N, N), 13062 (Au, N, N), 13941 (Au, La, N), 13970 (N, N, N), 13975 (Au, N, N, N), 16120 (N). Morelos: E. Lyonnet 674 (W--1642955). Nayarit: Bravo Hollis 7153 (Me); Ferris 5382 (Du--147865), 5643 (Du--147791). Nuevo Leon: Leavenworth 45 (N). Oaxaca: Martínez & Calderón 227 (Me, W--1808118); Matuda 994 (Mh, Mi); Orcutt 5096 (Du--307240); L. Williams 9890 (F--898348). Quintana Roo: Gaumer & sons 1702 (Gg--160421, P, Us). San Luis Potosí: L. I. Davis 242 (N); Kenoyer 776 (F--914979), A.610 (F--1000753). Sinaloa: Ferris & Mexia 5186 (Du--147857, Gg--144132, Me, N), 6186 (Me); J. González Ortega 6429 (Du--174178), 6758 (Gg--202945). Sonora: H. S. Gentry 1604 (Ca--576993, E--1102179, F--809914, Fs, Ge, I, La, Me, Me, S), 4828 (Ge); Wiggins & Rollins 346 (Du--295085, N), 396 (Du--295084, N). Tabasco: J. N. Rovirosa 531 (Pa). Tamaulipas: Edw. Palmer 8 (Gg--30575), 502 (F--217813). Veracruz: Barkley, Rowell, & Webster 2640 (N); Ervendberg 148 (P); Galeotti 7098 (Br, N--photo, P, Z--photo); Gouin s.n. [1867] (P, P); Linden 142 (Br); Orcutt 2999 (Du--154993, Po--173318). Yucatán: G. F. Gaumer 364, in part (Br, Ed), 1702 (Br, Du--199888, Ka--90993, Lu); Steere 1456 (Gg--208394), 7153 (Me). State undetermined: Fournier s.n. [1817] (P); J. González Ortega 306 (Me); Karwinski s.n. (Mu--452); Sessé, Mociffo, Castello, & Maldonado 129 ["87"] (F--844938, Q), 130 (F--845071, Q), 131 (F--845073, Q), 132 ["86"] (F--845072, Q). TRES MARIAS ISLANDS: Maria Madre: J. T. Howell 10428 (Gg--295608). GUATEMALA: Alta Verapaz: H. V. Johnson 211 (La). El Petén: H. H. Bartlett 12162 (I, S); C. L. Lundell 3693 (S). Guatemala: E. Wall s.n. [Guatemala City, 19/4/28] (Ew). Izabal: P. C. Standley 72536 (F--991703). Retalhuleu: P. C. Standley 66555 (F--987466). Santa Rosa: P. C. Standley 79505 (N). Zacapa: Steyermark 29216 (F--1035408). Department undetermined: E. Wall 16 [Garsmark, Tiguesata] (Go). BRITISH HONDURAS: C. L. Lundell 363 (Du--190614); Peck 293b (B). HONDURAS: Atlántida: P. C. Standley 53649 (F--583120). Morazán: P. C. Standley 21745 (N). Yoro: Yuncker, Koepper, & Wagner 8093 (Dp, F--942565, M1, S). NICARAGUA: Chinandega: C. F. Baker 754

(Po--121952). Grenada: C. F. Baker 166 (Du--76132, Po--64677). Managua: Garnier 226 (N). COSTA RICA: Alajuela: Brenes 12531a (N), s.n. [Camino San Ramon de San Mateo, 1920] (N); Carlos s.n. [Pantarenas, Nov. 1934] (N). Guanacaste: Brenes 12537a (N), 13114 (N); J. T. Howell 10198 (F--1031160, Gg--272372), 10229 (Gg--272369, Po--254166). Limón: G. Cufodontis 651 (V); H. Pittier 4296 (Br, Br); Tonduz s.n. [Herb. Inst. Physico-geogr. Nat. Costaric. 14748] (P). Puntarenas: Biolley 2664 (Br). Province undetermined: H. Pittier s.n. (Br); Rowlee & Rowlee 505 (It); Tonduz 8502 [Rio Yuraquin] (Br, Br). PANAMA: Bocas del Toro: G. P. Cooper 129 (P); Wedel 2834 (N). Canal Zone: Peggy White 254 (N). Chiriquí: Woodson & Schery 835 (N). Darien: P. H. Allen 853 (F--1004887). Province undetermined: Duchassaing s.n. [Panama] (P). BAHAMAS: Britton & Brace 655 (F--171986); Britton & Millspaugh 5534 (F--198364), 6166 (F--198900); Curtiss 24 (Cm, Ed, F--143917, Mu--3979, P, Vt); A. S. Hitchcock s.n. [XI.14. 1890] (F--174999), s.n. [XII.3.1890] (F--175288); Millspaugh & Millspaugh 9196 (F--287952); Small & Carter 8928 (F--283899). CUBA: Camaguey: Acuña s.n. (Es--13793); Shafer 128 (F--284267). Havana: Abarca 3662 (Po--63542); Boldo 58 (Q), 61 (Q), 62 (Q); De la Ossa s.n. (Dc, Dc); Ferrero s.n. [1821] (Dc); León 452 (Ha), 2233 (Ha), 2234 (Ha), 2235 (Ha), s.n. [15/5/1909] (Br, P); Moldenke & Moldenke 19868 (Lg, N); Née 63 (Q); P. Serre s.n. [1909] (Bg); Van Hermann 113 (Gg--31232, P), 3420 (Po--63791). Las Villas: Britton, Britton, & Shafer 3 (Cm); Combs 220 (F--16859, Io--35335, Ka--61208); Jack 6106 (P); Pringle 9 (Vt); Rutten-Pekelharing 14 (Ut). Oriente: Clément 136 (Ha), 2791 (Ha, N), 6574 (N), s.n. [1943] (Ha, N); León 17707 (N), 18273 (Ha); León & Seifritz 18273 (N); León & Victorin 17707 (Ha, N); Linden 1733 (Br, P); Pollard & Palmer 339, in part (F--176398); C. Wright s.n. [1859, 1860] (Br). Pinar del Río: Alain 487 (Ha, N); Shafer 396 (Cm, Cm), 11144 (F--325382). Province undetermined: Boldo 59 (Q); Collector undesignated s.n. [1827] (Dc); Rutten-Pekelharing 97 (Ut); Sagra s.n. (P). JAMAICA: P. Browne s.n. [Herb. Linnaeus G.35, S.5] (It--photo, P--photo, Z--photo); E. J. F. Campbell 6785 (F--145927); Collector undesignated 779 (Ed); W. Fawcett 8058 (F--146455); W. Harris 11796 (F--433813, Gg--31233, P), s.n. [27.8.2] (F--145776); Herb. Mus. Bot. Stockholm s.n. (S); Murray 176 (Dc), 177 (Dc), 178 (Dc); Swartz s.n. (Dc); Wulfschlagel 429 (Mu--446). HISPANIOLA: Dominican Republic: H. A. Allard 13743 (N), 14024 (S); R. Ciferri 16, host (N); Fuertes 886 (Lu); Howard & Howard 9486 (N); Türkheim 2526 (Ed, Mu--4122); Valeur 443 (S). Haïti: Bertero s.n. [S. Dom.] (Mu--445); Ekman H.7958 (N); Herb. Harvey s.n. [Haïti, 1842] (Du--166529); Herb. A. L. Jussieu s.n. (P, P).